

REMARKS

The Examiner rejects Claims 1-22 under 35 U.S.C. 103(a) as being unpatentable over Horvitz et al., U.S. Patent No. 6,161,130. Applicant respectfully disagrees with this rejection, especially in view of the amendments made hereinabove. Specifically, the subject matter of Claims 7-9 has been incorporated into each of the independent claims.

For example, the Examiner admits that Horvitz does not explicitly teach the limitation of a statistical analyzer. Further, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz by specifying the classifier module as a statistical analyzer since the same functionality of classifying e-mail message is achieved. Applicant respectfully disagrees, since applicant's statistical analyzer, as claimed, does not just aid in classifying e-mail message, but does so in an enhance manner over Horvitz, by analyzing statistics, as claimed.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir.1991).

Applicant respectfully asserts that at least the first and third elements of the *prima facie* case of obviousness have not been met, since the Examiner's proposed modification would not be obvious and further the prior art references, when combined, fail to teach or suggest all the claim limitations. A notice of allowance or a specific prior art showing of each of applicant's claimed elements, in combination with the remaining claimed features, is respectfully requested.

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Still yet, with respect to the subject matter of Claim 7 (now present in each of the independent claims), the Examiner admits that Horvitz lacks such feature and then relies on Horvitz's alleged teaching of a feature detector that detects handcrafted features and various text features, and Office Notice to reject the same. Applicant respectfully disagrees with this assertion, as URL analysis in the specific context of the text of the electronic mail message provides enhanced detection of unwanted messages.

Thus, applicant points out the remarks above that clearly show the manner in which such claimed feature further distinguishes Horvitz and would not be obvious. Applicant thus formally requests a specific showing of the subject matter, as claimed, in this and ALL of the claims in any future action. Note excerpt from MPEP below.

"If the applicant traverses such an [Official Notice] assertion the examiner should cite a reference in support of his or her position." See MPEP 2144.03.

Further, with respect to the subject matter of Claim 8 (now present in each of the independent claims), the Examiner relies on the following excerpt from Horvitz to make a prior art showing of applicant's claimed "wherein the statistics gathered using the statistical analyzer include results of an analysis of e-mail addresses in the electronic mail message text."

"In particular and in accordance with our specific inventive teachings, each incoming e-mail message, in a message stream, is first analyzed to assess which one(s) of a set of predefined features, that are particularly characteristic of spam, the message contains. These features (i.e., the "feature set") include both simple-word-based features and handcrafted features, the latter including, e.g., special multi-word phrases and various features in e-mail messages such as non-word distinctions. Generally speaking, these non-word distinctions collectively relate to, e.g., formatting, authoring, delivery and/or communication attributes that, when present in a message, tend to be indicative of spam, i.e., they are domain-specific characteristics of spam. Illustratively, formatting attributes may include whether a predefined word in the text of a message is capitalized, or whether that text contains a series of predefined punctuation marks. Delivery attributes may illustratively include whether a message contains an address of a single recipient or addresses of a plurality of recipients, or a time at which that message was transmitted (most spam is sent at night). Authoring attributes may include, e.g., whether a message comes from a particular e-mail address. Communication

attributes can illustratively include whether a message has an attachment (a spam message rarely has an attachment), or whether the message was sent by a sender having a particular domain type (most spam appears to originate from ".com" or ".net" domain types). Handcrafted features can also include tokens or phrases known to be, e.g., abusive, pornographic or insulting; or certain punctuation marks or groupings, such as repeated exclamation points or numbers, that are each likely to appear in spam. The specific handcrafted features are typically determined through human judgment alone or combined with an empirical analysis of distinguishing attributes of spam messages." (col. 9, lines 20-50)

After carefully reviewing this excerpt, along with the remaining Horvitz reference, however, applicant respectfully asserts that Horvitz merely takes into account the address of a recipient and/or sender of an incoming message (which are not in the body of the electronic mail message text). There is simply not even a suggestion of any analysis of e-mail addresses in the electronic mail message text body. Only applicant teaches and claims such analysis of e-mail addresses embedded in the text of the electronic mail message, which provides enhanced detection of unwanted mail messages.

Again, applicant respectfully asserts that at least the first and third elements of the *prima facie* case of obviousness have not been met, since the Examiner's proposed modification would not be obvious and further the prior art references, when combined, fail to teach or suggest all the claim limitations. A notice of allowance or a specific prior art showing of each of applicant's claimed elements, in combination with the remaining claimed features, is respectfully requested.

Applicant further notes that the Examiner's application of the prior art to the dependent claims is also replete with deficiencies. Just by way of example, with respect to the subject matter of Claim 2, the Examiner admits that Horvitz lacks applicant's claimed "ratio," as claimed, and then relies on Horvitz's col. 9, lines 20-50 (see above) to dismiss the same. Applicant respectfully disagrees with this assertion, since applicant's use of "a ratio of words capitalized to total number of words," as claimed, provides significant advantage because it takes into consideration the length of the electronic message text. A long legitimate e-mail message may, in fact, have numerous capitalized words (by virtue of its size). Only applicant's claimed invention takes this into account when detecting unwanted messages by use of the claimed ratio.

With respect to the subject matter of Claim 3, the Examiner admits that Horvitz lacks applicant's claimed "ratio," as claimed, and then relies on Horvitz's col. 9, lines 20-50 (see above) to dismiss the same. Applicant respectfully disagrees with this assertion, since applicant's use of "a punctuation to word ratio," as claimed, provides significant advantage because, again, it takes into consideration the length of the electronic message text. A long legitimate e-mail message may, in fact, have much punctuation (by virtue of its size). Only applicant's claimed invention takes this into account when detecting unwanted messages by use of the claimed ratio.

Still yet, with respect to the subject matter of Claim 4, the Examiner admits that Horvitz lacks such feature and then relies on Horvitz's alleged teaching of a feature detector that detects handcrafted features and various text features, and Office Notice to reject the same. Applicant respectfully disagrees with this assertion, as analysis of the number of URL's provides an additional, unique metric by which detection of unwanted messages is enhanced.

With respect to the subject matter of Claim 5, the Examiner admits that Horvitz lacks such feature and then relies on Horvitz's alleged teaching of a feature detector that detects handcrafted features and various text features, and Office Notice to reject the same. Applicant respectfully disagrees with this assertion, as analysis of statistics including at least one telephone number in the text, in the specific claimed context, provides enhanced detection of unwanted messages.

With respect to the subject matter of Claim 6, the Examiner admits that Horvitz lacks such feature and then relies on Horvitz's alleged teaching of a feature detector that detects handcrafted features and various text features, and Office Notice to reject the same. Applicant respectfully disagrees with this assertion, as an analysis of character type, in the specific claimed context, provides enhanced detection of unwanted messages since certain character types may provide indications of an unwanted message.

With respect to Claims 4-6, applicant again points out the remarks above that clearly show the manner in which such claimed features further distinguish Horvitz and would not be obvious. Applicant thus formally requests a specific showing of the subject matter, as claimed, in this and ALL of the claims in any future action. See MPEP 2144.03.

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With respect to Claim 11, the Examiner relies on the following excerpt from Horvitz to make a prior art showing of applicant's claimed "wherein the statistics are placed in a results table, wherein entries in the table are passed as inputs to a neural network engine."

"Classifier 370 can be implemented using a number of different techniques. In that regard, classifier 370 can be implemented through, e.g., a support vector machine (SVM) as will be discussed in detail below, a Naive Bayesian classifier, a limited dependence Bayesian classifier, a Bayesian network classifier, a decision tree, content matching, neural networks, or any other statistical or probabilistic-based classification technique. In addition, classifier 370 can be implemented with multiple classifiers. Specifically, with multiple classifiers, each such classifier can utilize a different one of these classification techniques with an appropriate mechanism also being used to combine, arbitrate and/or select among the results of each of the classifiers to generate an appropriate output confidence level. Furthermore, all these classifiers can be the same but with, through "boosting", their outputs weighted differently to form the output confidence level. Moreover, with multiple classifiers, one of these classifiers could also feed its probabilistic classification output, as a single input, to another of these classifiers." (col. 15, lines 10-20)

After carefully reviewing this excerpt, along with the remaining Horvitz reference, however, applicant respectfully asserts that Horvitz merely mentions a neural network, but fall short regarding applicant's unique claimed context. There is simply not even a suggestion of any statistics that are specifically placed in a results table prior to being passed as inputs to a neural network engine.

With respect to Claim 16, the Examiner relies on col. 16-18 from Horvitz to make a prior art showing of applicant's claimed "wherein the neural network engine utilizes adaptive linear combination for adjusting the weights." After carefully reviewing this excerpt, along with the remaining Horvitz reference, however, applicant respectfully asserts that Horvitz makes absolutely no mention of an adaptive linear combination for adjusting the weights, as claimed.

Again, applicant respectfully asserts that at least the first and third elements of the *prima facie* case of obviousness have not been met, since the Examiner's proposed modification would not be obvious and further the prior art references, when combined, fail to teach or suggest all the claim limitations. A notice of allowance or a specific prior art showing of each of applicant's claimed elements, in combination with the remaining claimed features, is respectfully requested.

Still yet, applicant brings to the Examiner's attention the subject matter of new Claim 23 below, which is deemed to be novel:

"wherein the adaptive linear combination is presented input vectors and desired responses for the adjusting weights until outputs are close to the desired responses."

Thus, all of the independent claims are deemed allowable. Moreover, the remaining dependent claims are further deemed allowable, in view of their dependence on such independent claims.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 505-5100. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-1351 (Order No. NAI1P022/01.106.01).

Respectfully submitted,
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